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METAPHYSICS: ITS FUNCTION, CONSEQUENCES, AND CRITERIA[1]

THE occupation of metaphysicians has changed its center of gravity in recent years. It is more concerned with the rigorous statement of problems and less immediately with their solution. Rigorous statement is in any case a matter of conscience. But today it is something more, a matter of economy! For who would wish to belabor a question which vanishes on precise statement? And on which of the traditional metaphysical problems—the mind-body problem, the one-many problem, the substance-attribute problem, the substance-process problem, the free-will problem—has this hope not dawned?

This engaging prospect of relief from metaphysical travail is new in its sweep but not in its principle. For the fashion of referring metaphysical difficulties to the semantic stupidities of metaphysicians themselves was set, I believe, by the philosopher who said, "We have first raised a dust and then complain we can not see." But his experience, like that of his great followers in analysis, Hume and Kant, showed at least this: that even an illusory problem leaves in its wake the problem of the illusion. (If, for example, an empirical analysis of causality shows no observed necessity in the transition, the problem arises, not alone, How do we come to believe in the necessity? which Hume discusses, but also, How does the idea of necessity arise? for which he has and can have no answer.)

Hence it is that no new definition of metaphysics can declare itself independent of the issues customarily treated under that name. For every definer, these issues are to be taken as data for a problem of induction, What have these issues in common? Metaphysics is simply the systematic discussion of that genus of problem.

One of the simplest and oldest answers to this inductive question is also one of the most satisfactory. As one might expect, it was given by a poet; for poets have the gift of seeing the common

[1] Read as part of a symposium on this subject at the meeting of the Eastern Division of the American Philosophical Association, Feb. 22, 1946, at Sarah Lawrence College. The two papers by Sterling P. Lamprecht and John H. Randall, Jr., will appear in the next issue, Number 14.

elements of diverse subject matters. Lucretius did not even have all the data before him, but he knew what he proposed to talk about; and when he entitled his discussion "Concerning the Nature of Things," he gave a rough but usable account of metaphysics. Aristotle, who had the misfortune never to have heard the word "metaphysics," and who gave to our subject the title "theology" (Book Epsilon 1026a), suiting the name to his own decidedly non-empirical speculations, likewise quite accurately described it as "First Philosophy." This is to define it by its serial place among the sciences, above mathematics in concreteness and above physics in universality.

For Aristotle, the enquiry into "being *qua* being" was a fascinating part of the subject but by no means the whole of it. It would be arbitrary to exclude from his metaphysics his discussions of matter, of the soul, of the four causes, of form and pure form, of *physis* and *entelecheia*. And this sort of enquiry, whether we designate it as speculation or as "the creation of new concepts," belongs to metaphysics today. Metaphysics is still the most general account we can give of man and his world in rational terms. But with this proviso: it is not an account *in extenso*, as if it were a more elaborate geography of the heavens, but as Aristotle insisted an account in terms of "principles and causes." These two significant terms are roughly equivalent to what Lucretius meant by "nature" in his phrase "the nature of things."

But the primary responsibility of a definition of metaphysics is not to philosophical tradition. Long before the term was heard of, human beings were asking questions we now classify as metaphysical. These questions continue to be asked by persons who would be horrified to learn that they were talking metaphysics. Josiah Royce once opened a course on this subject with the story of a conversation which he overheard on a train from Braintree to Boston. An older boy, full of a new scientific initiation, said to his younger companion, "There ain't no sky." The younger, duly impressed but incompletely satisfied, answered, *"Then, what is it that ain't?"* This, said Royce, is a typical metaphysical question. And it is a highly sensible question. Supposing that the world is such as to present us with various illusory appearances, this is itself an important general fact about the world. And each such illusory appearance is another fact, which can not be equated to nothing.

In my judgment, none of the major problems of metaphysics is purely or primarily an artefact of metaphysical subtlety. Many of them gather about accidents of language; but since these alleged accidents (as the substance-attribute relation) appear in all developed languages (Chinese has been said to be an exception, but

I can not accept the argument), the semantic fact records a more original mental disposition. The term "metaphysics" has simply served as a collecting point for the more sweeping and radical questions which man puts to his world, *because he is human.* The function of metaphysics—to speak to our assigned title—is derived from a primitive and inescapable human concern, man's ambition to know where he is, what he is, why he is, and what the whole thing means.

There is an advantage in tracing the business of metaphysics back to these elementary questions—some of which are questions of fact, and some questions of meaning: it is that whatever we may say about them they *can not be denied significance.* The attempt to answer them is audacious; but a touch of presumption attends all living on the human plane. It is also full of dialectical traps, as no one since Kant has been able to forget. But one thing it is not: it is not a meaningless enterprise. The pursuit of meaning can not be a meaningless pursuit except in terms of a definition of meaning unenlightened by what meaning means.

It is always possible that elementary questions—such as, How did the world begin, and, When?—may proceed on assumptions contrary to fact. It then belongs to the good faith of metaphysics to point out these assumptions; but then not halting there—to translate the questions into other terms so as to preserve the sense of the original quandary out of which they arise.

The *theory of knowledge is thus an inseparable adjunct* of the metaphysical adventure of ideas. It would be convenient if it could be an independent and preliminary Critique of Reason. But the trouble is that theories of knowledge seem to require metaphysical assumptions, even those which propose to begin with "the given" and to adhere strictly to something called "experience." If metaphysics is itself hazardous, it appears to be still more hazardous to think out a region of reality which thought can not think and knowledge can not know. The epistemologist who defines the limits of possible knowledge has to be on both sides of the boundary of ignorance at once. I suggest that it would simplify matters if, for the present argument, we admit the problem of knowledge as a part of metaphysics itself.

With these preliminaries, I propose as a working definition of metaphysics *the systematic effort to know the real and the whole.* This expression, I think, will be fairly well understood by the run of mankind. But for philosophers there will be in it three dubious terms,—"to know," "the real," and "the whole."

I shall skip over "to know" for the moment, and discuss first "the real," a term of peculiar danger.

I. THE REAL

It will be evident that I am using "the real" as a term of contrast, as it is used in ordinary speech. We use it, in fact, for various contrasts: for the genuine as against the ungenuine,—real money versus bogus money; for the actual state of things as against the apparent state of things,—the ice seemed solid, it was really thin; for the true motive as against the ostensible motive. A colleague who was asked to report on the working of a German statute for the remedy of libel brought in, instead, a discussion of the corresponding French law. He said that he had two reasons for the substitution, a good reason and the real reason. The good reason was that the German book was out of the library. The real reason was that he didn't read German. In these several non-metaphysical cases, the "real" indicates a non-obvious factor which, with more complete knowledge, at once corrects the misleading appearance and explains it. In each case the "appearance" is a self-made appearance, in the sense that it is an interpretation of an actually present datum: in the replacement of the apparent by the real, the datum is not removed, but the hasty interpretation is replaced by a valid interpretation. When we say that metaphysics seeks the real, we imply in analogous fashion that there are misinterpretations of things-in-general which need to be replaced by valid interpretations, the data of experience, as the stuff to be interpreted, remaining the same.

We imply somewhat more than this, namely, that there are misinterpretations to which we are liable not individually alone but as a *genus homo;* and that these common illusions affect not the details of experience—rainbows and converging rails, counterfeit Old Masters and campaign promises—but the hang of experience as a whole. Metaphysics has to deal with the universal perspective illusions, those which come from "our finite situation," the relativities of point of view and interested concept-making, the necessity of acting in particular if we act at all.[2]

Here the enterprise of metaphysics in the West becomes tangent to the similar enterprise in the Orient, which goes under the general name of "overcoming illusion." There are instructive differences

[2] Bergson's penetrating comment, *"L'action ne saurait se mouvoir dans l'irréel,"* suggests what is true,—that it is easier to remain under illusion if you sit still and contemplate than if you stir around and attempt to deal with the supposed objects; it also suggests what is false, namely, that the environment of successful action is always what we suppose it to be. You can not push your boat off from a fog bank; but you can push it off from floating ice, mistaken for shore. In a more general sense, the dictum is valid: the environment which sustains action must be as real as the action itself,—action can not be successfully carried on in a phantom world.

between the two. The oriental seeker for reality has a practical end in view, mukti, the escape from Karma. He is not seeking for new knowledge, but for a "realization" of what he already verbally knows, his identity with the ultimate being. And he knows that this kind of knowledge can be no fruit of merely a finer logic, but that for his insight he must pay a price in physical and moral austerity, such as we would consider irrelevant. We tend to assume that whatever truth there is for us in the universe will fall into the net of a better technique of thought. The Orient knows that this is another western illusion, perhaps the deadliest of all!

But whether East or West, perhaps the most prevalent illusion of metaphysical consequence is the illusion of separate being, that is, the acceptance of the separableness of the objects which, by visual outline and verbal target, we stamp as individual things or persons. What we separately attend to, we ascribe a certain self-sufficiency to. This impression is enhanced when we *act* among these objects; for action requires a simplifying assumption that the world, in the main, holds stable while we act. We have to learn that the apparently self-sufficient is dependent, and that the stabilities of the surface are tentative and passing, and hold their momentary place by dint of deeper stabilities. The growth of adequacy in knowledge and behavior is a growth in the recognition of dependence. To find the real is, in general, to find independent being on which other being depends.

The detail of this growth is the work of science. Science expresses its findings in the general form, "*B* is 'a function of' *A*," that is, the character of *B* depends on the character of *A* (in which *A* may be a single event or a group of events). To control *A* is thus to control *B*; and the ideal of science is to trace out the entire system of physical dependences in terms of ultimate units and laws. It would be within bounds of analogy to call the "independent variables" of scientific equations relative reals, and to regard science as a relative metaphysics. "Relative" because science never points out the dependence of *B* on *A* without reminding us that *A* is in turn dependent on something else; so that independent being never appears, unless we choose to speak in this way of the system which as a whole we call "Nature."

But Nature as a whole never enters into a scientific equation. It might be said, therefore,—and has been said—that science never encounters independent being, and has no knowledge of, nor interest in, such an object if there were one. This is not quite the case. For purposes of calculation, science—I will not say frequently but habitually—operates with "closed systems," that is, with groups of entities assumed free from outer influences, and thus constituting

an independent world. Without this artificial simplification physical theory could never have unravelled the intricate maze of actual fact. Each kind of molecule, each kind of atom, each kind of subatomic entity or polar-pair of entities or entity-field-system, has been theoretically treated as if it were an independent world. We play with independence in order to spell out dependence; which implies that we know very well what we mean by independence. Whether we can explore "the whole of Nature" or not, we know precisely what we mean by it—a group of interdependent entities and events in a space-time order which has no external dependences of the type that prevail within it.

The work of science is thus an approach to the real, and in a sense the work of metaphysics is continuous with it. There has been a tendency in recent years, encouraged by the unpicturable and unmodelable character of the terms of physical equations, to regard these terms as "abstractions." They are objects of theory and not of perception. The "reals" with which we have to do, it is said, are the experiences of the scientific observer, from the setting up of his apparatus to the recording of his results: what happens between is a process for which the mathematical symbols provide only a mythology. This view, I think, is due to a simple confusion. The experiences of the observer are indeed "real" experiences: I have no hesitation in putting them higher in the scale of reality—if there is such a scale—than any physical object whatever taken by itself. But we are not comparing the entities symbolized in the equation with the consciousness of the observer. We are comparing the entities symbolized in the equation with the *physical events* of which the observer is aware. That is a wholly different matter. And I submit that the entities symbolized in the equation are at least as real as the perceived results.

Since last summer, the entities symbolized by that astoundingly simple equation $E = mc^2$ seem less abstract than before: even the physicists begin to believe in them. And the whole world will now agree that the impression of harmless quiescence offered by a dull chunk of uranium oxide ore is illusory as compared with the reality conveyed by the long-doubted formula for the well-hidden and admirably self-contained energies of the atom. If valid prophecy is the earmark of reality in the *basis* of prophecy, our present conception of the constitution of the physical world is far more real than anything we had touched in the nineteenth century. That we approach an object by way of thought rather than by way of perception, does not qualify that object as "abstract."

(There may be, and I think there is, good ground for calling both the physical operators and the physical effects abstract, as I shall

later show. At the present, my argument is that they stand on the same level of reality.)

We have used the work of science to illustrate what we mean by the real, as a term of contrast: independent being which controls and so explains phenomena; it does indeed sustain operation and prediction,—these are its partial criteria; but even if there were no operations and no predictions, the knowledge of those entities and those laws would give us an understanding of our actual experience within those realms of fact: we would know that the sky is not there and also why, in spite of that, the blue bowl continues to arch over us, "whereunder crawling, cooped, we live and die." Metaphysics passes beyond the scientific liberation to enquire whether there is any real more unconditionally independent than Nature.

But if science is an approach to the real, why is metaphysics anything other than unified and completed science?

The answer is, in part, that while science finds relative reals, it has nothing to say about whether there are or are not other reals; and, in part, that the question of reality is not the problem of science, so that even in the region in which it approaches the real, it makes no assertions about the reality of its findings. Let me now develop this point by way of our second topic, the whole.

II. THE WHOLE

It is we as metaphysicians, not the physicists, who have raised the question of the reality of the terms of physical analysis. Science does not enquire whether its terms are real, still less whether they are "the real." Obviously this latter title, "the real," could only be conferred when we had first assured ourselves that there are no other reals, and by definition science is not in a position to make this search.

But the search must be made. For if the real is what we have called it, independent being on which other being—perhaps Nature, perhaps we ourselves—depend, neither the human mind nor the human will could be content to *adjust itself to only a part of reality*.

In practice we are obliged to adjust ourselves to a part of the conditions governing our lives: we do not know all of them. No farmer can deal with all of the conditions governing the growth of his crops. But to say this is to confess that there *is* a totality of "all the conditions" conceptually at work in our behavior: the farmer who attempts to control the quality of his seed, his soil, his tillage, his irrigation, reaches out to control the insect pests and the weather, and if need be to exorcise the demons of bad luck. All human life moves forward under the persuasion of the conceptual goal, "all the reals"; this attempt to take the measure of "the whole" is the characteristically human mental trait.

As long as it is so much as verbally conceivable that there should be many independent reals, man as metaphysician will enquire what they are and how they are related to him and to each other as well as to the phenomena dependent on them. Because he is concerned with the real, he is bound to be concerned with the whole. (And it is not damaging to this concern of his to note that the accessible regions of experience continually burst all bounds of knowledge and expectation, burgeon with unclassed novelty, constitute no nice bundle of perceptible organic order; experience has open ends toward the future; but a cornucopia may be running over and yet be neatly contained at the peak. The abundance and novelty of the world are in no sense inconsistent with its wholeness and unity.)

Hence, no matter how complete any existing physical analysis may become, metaphysics has to enquire whether there is any further dependence to be recorded, and any further independence. Does Nature contain the full explanation of all its own facts? Are all phases of our experience—physical, reflective, categorical, normative—derivable from these physical reals? Is Nature as a whole dependent in any fashion on something other than Nature? Is there any parallel and non-intersecting realm of being, such as a conceivable realm of mental history having its own principles and causes? Do the realms of physics and history intersect, in the human being, or elsewhere? Are there other realms of being, known, surmised, or undreamed of but possible?

If the answer to the first two of these questions is positive, and to all the rest negative, the outcome of metaphysical enquiry will be comprisable in two propositions: (i) the physical reals are "the real"; (ii) Nature is the whole.

It will now be evident that science can not make either of these assertions. It is not within its province to say "Nature is all there is," for the force of this assertion is the denial of the existence of anything outside Nature, and science has no data for such a denial. Neither can it say "Nature is *not* all there is." Yet one or other of these propositions, dealing with a matter of fact, must be true. It is the business of metaphysics to enquire which is true.

But by what methods can metaphysics enquire, where science can not go? Here we turn to the third item of our definition,—what is it "to know"?

III. WHAT IS IT TO KNOW?

You have allowed me, perhaps with some protest, to use the term "the real" as a term of contrast with what lies on the surface of experience, following Aristotle's maxim that metaphysics ought to be occupied with "principles and causes," rather than with the mani-

fold facts that follow from them. This implies that the real is an object of search. It does not, however, exclude the possibility that the real may *also be directly experienced,* and that the labor of thought may have the function of introducing us either to a new phase of experience or to a recognition of what is continuously present,—as self-consciousness may be a discovery of what is always there. At any rate, I have assumed that the real has to be sought out even though we find it in our hands.

But there is another use of the term "real" which today has a high metaphysical importance. The real is taken to include the whole system of experienced objects. This usage registers a valid insight that *experience can not be unreal;* that "experience" is, in some sense, the first and typical reality. For this view speaks the voice of the boy who asked "What is it that ain't?" For it also speaks that conviction which converges from so many sources, from Fechner to Dewey and Mead, Whitehead and James—the conviction that Nature is not bifurcated, that the real can not be that quality-less ghost-train of theoretical physics in which conscious nonentities haunted by futile images helplessly ride; that the common man's attribution of reality to the concrete fulness of the sense-laden scene must find its support in philosophy if philosophy is not to quit the stage. This insight has the force of a new philosophical intuition, joining hands indeed with common sense, but on a new level of analysis. The task of metaphysics, on this conception of the real, is not to seek a non-obvious cause, for the real is always at hand, but to develop a set of conceptual tools which can comprise without inconsistency the total furniture of life as it is lived.

This task, which is certainly a necessary task for any contemporary philosophy, might be called, for brevity's sake, the task of *adequate description.* With some hesitation, it might be called an "empirical task." I say "hesitation" because the word "empirical," through much use by subtle thinkers, has taken on a greater range of ambiguity than almost any other philosophical term. The empirical can not be limited to "the given," which is now seen to stand for an unattainable ideal of absent-mindedness. But when *concepts* are admitted into the empirical—as when we say that chairs and mountains are real—there is no rule whereby to limit them to those which are somehow inherent in the stuff of experience and those which are injected by a theorizing activity. If inadequate concepts are to be replaced by adequate concepts, this is not an operation which Nature proffers on her own initiative. It is the hard labor of scientific method; it involves that act of scientific genius for which no rules can be given, the invention of hypotheses. But when we include *this* activity and its achievements in the scope

of what is "empirical," the empirical ceases to be what is *found* in experience, and becomes coextensive with what is *verified* in experience—*a condition from which no speculation whatever can cut wholly adrift.* The word "empirical" thus loses all contour, except for its *governing interest.* It is concerned *to report;* it makes no claim to understand. It intends to describe, not to explain.

In the seventeenth century, empiricism meant a new intellectual morality. It was a morality of courage and also of obedience: courage in trusting human powers of knowledge as against authority; obedience, as a scrupulous respect for fact in the purpose of mastering nature. In the twentieth century, empiricism still means a scrupulous obedience to fact. *But where is its courage?* The weight of authority no longer intimidates the seeker for truth. Why then does empiricism in philosophy today renounce the human impulse to understand, and accept the rôle of faithful and consistent description as a sufficient goal, not alone for science, but for philosophy as well? Is it because men no longer care to understand, or is it because they have renounced hope that they *can* understand?

I am inclined to think that *science itself,* to tide over an era of conceptual difficulty, has accepted a tentative empiricism which it will not permanently retain. The scientific search for the real in terms of principles and causes—or, if you prefer, laws and functions—*is* a search for understanding. To know how *B* depends upon *A* is a *beginning* of an explanation of *B.* And the guiding principle of scientific enquiry, which Galileo lighted on without knowing it, the principle of conservation, is the basis of our capacity to do business with Nature, relying on her continued identity and her mathematically scrupulous performance.

But whatever the course of scientific development, I am convinced that *metaphysics* must take its task of careful analytic description—essential as it is—as a basis for the further task of understanding the world. It is for this reason that I adhere to the conception of the object of metaphysics as the discovery of the real, in terms of principles and causes. Men want to know the independent *because they want to understand the dependent;* they want particularly to know whether Nature is itself independent and final, or whether it is in turn dependent, and on what.

The new insight, that experience can not be unreal, is itself a step toward the answer. For to judge the physical events in their qualityless equational process as "abstract" is to give them a dependent rôle within a more concrete version of reality.

But the descriptional categories now invoked to cure the bifurcation of Nature run a danger of obscuring the problem we

ought to solve. When the process of Nature is recognized as no mere rechurning of the same conserved total of mass and energy, but as evolving a novelty not contained in any equation, *description hastens to cover this fact by new names* such as "creative evolution," "emergence," or the "principle of creativity" itself. These expressions rightly record that pervasive feature of experienced process, *the unheralded arrival of qualitative change.* But, being satisfied to describe, they tend to make a formulation of the mystery serve as an explanation. The principle of emergence covers no account of what it is that emerges; and Whitehead, whose metaphysics is avowedly descriptive, requires beyond his "creativity" an additional and divine principle to account for the solicitation to good which he sees in the creative advance of world-process. He invokes non-empirical factors. Description thus passes over into explanation without acknowledgment of the transition, and hence with an obscuration of the metaphysical method actually employed.

I approve of this new and speculative step: I do not approve of describing it as description!

It is not necessary to apologize for the desire to understand. Improvement in the categories of description is frequently a necessary preliminary to advance in understanding. Kepler's formulations of planetary motion were descriptive improvements: they paved the way for Newton's hypothesis, from which those laws of Kepler can be deduced. And this is to say that Newton provides a relative understanding of Kepler; for *just in so far as we perceive deductive relations in the world, we understand it,*—a matter of degree and of slow achievement. Inductive method, whether in science or in metaphysics, has for its object the reaching of hypotheses from which testable deductions can be made; and this is tantamount to saying that induction, often taken as identical with empirical method, has as one of its goals the advance of understanding.

It is not a refutation of this aim to point out the obvious truth that all human insight into necessity must be partial and slow, that deducibility is the latest trait, not the earliest, which the mind can perceive in nature. For science and metaphysics alike, the goal may be endlessly remote: that fact does not deter the scientist, nor should it deter the metaphysician. Each has his empirical labor, each his inductive problems, each his partial insights into necessity, his tentative achievements. It is for metaphysics today to resume its courage!

IV. METHODS AND CRITERIA PECULIAR TO METAPHYSICS

Metaphysics must resume the courage of its long journey; it must also resume the courage of its peculiar character, which enables

it to reach a certain minimum of important truth without the age-long postponement.

There are phases of the metaphysician's task which are parallel with science, and must wait for science. It has its inductive aspect. Every concrete conception of the nature of things has the position of an hypothesis with an immense obligation of organizing experience about it. The debate among these positions takes the form of a conversation across generations, and when it is formally resumed, it appears as an historical dialogue or "dialectic," in which any given hypothesis through being pursued to its deductive consequences reveals its defects, and tends in so doing to suggest a successor. The criteria of validity in this dialectic are analogous to those which are used in scientific verification. Analogous rather than identical; for while a precise measurement of sensible fact has at times refuted or confirmed a physical hypothesis, I know of no sense-datum and no measurement which either confirms or refutes any metaphysical position, and this for the evident reason that the metaphysical problem begins with the relation between the whole sphere of physical measurements and other possible spheres of reality.

This aspect of the case marks the point at which metaphysics need not wait for the conclusion of science to attain certain results. For just as a person may be known without knowing everything that constitutes a person, so there are totalities in the world which may be regarded in their total character without finishing the exploration of their detail. In all languages—as their intertranslatableness implies—there are terms roughly equivalent for such regional wholes as "the physical," "the mental," "the biological," "nature," "society," "history," as well as for "the universe," "the gods," and "the devils." Perception of relationships among these regions need have neither the scale nor the intricacy of the internal scientific analysis of any one of them. Since the mind must begin its ordering from the whole inward as well as from the detail outward, metaphysics lives naturally among the relatively simple relations of the major concrete totalities, and their appropriate categories. What it finds must indeed be responsive to, and revisable by, the progress of the sciences; but it is not prevented by this fact from reaching in its own field some judgments having the quality of necessity.

Let me illustrate this point.

Suppose I conceive the metaphysical position that there is nothing beyond nature, and offer as confirming evidence our present capacity to trace the entire behavior of human individuals and thereby their entire content of consciousness to physical causes. To com-

plete the evidence I utter the proposition, "I now observe myself being caused." It may occur to the listener that this proposition can not possibly be true. For whatever the speaker could observe in the way of the momentary impingement of prior events on the events comprising "himself" would not include the particular event of his observation. And since at the moment of his speaking his "self" is essentially involved in the act of speaking, the proposition is necessarily false. A man may say "I am dying" and speak the truth; but he can not possibly say "I am dead" and speak the truth. For a similar reason he can not truly say "I observe myself being caused." The difficulty is not logical: both of the propositions, "I am dead," "I observe myself being caused," are formally intelligible. The difficulty is metaphysical. And the form of thought which perceives this difficulty is the "dialectic" in its second and more specific sense, the recognition of presuppositions.

Our questions have their presuppositions as well as our hypotheses; and to perceive these presuppositions is a part of the wisdom of avoiding the meaningless questions. If one asks whether the world of Nature is as a whole dependent on some other real, he must make clear that he is implying the existence of types of dependency other than causal. This is a very ancient insight, but failure to observe it is the source of much metaphysical wandering. Not until Kant's day did it become generally clear that to ask for the cause of Nature was to ask for the cause of the entire system of causes, and that this question is internally inconsistent. But already in the early stages of Greek speculation, Anaximander had seen the fallacy of this type of enquiry, and had clearly stated it. He is credited with having said, "Only that which is above all becoming can be the source of change." If this remark implies that stability is intrinsically more intelligible than change, it requires further support. If it intends to point out that the fact of change is not self-explanatory, and that to refer change to prior change is an absence of explanation, that something other than change is required, it is an important truth with a quality of self-evidence—once it is clearly stated.

Anaximander's services to metaphysics consist chiefly in this negative indication: his *to apeiron*, structureless, formless, limitless being, is hardly more than an x, the unknown answer to the residual questions. It has done little to deter either Heracleitus or the flux-philosophers of the present from presenting the Flux as an answer to the problem of the source of change, which is to explain change by change. But it lighted a spark in the minds of Plato and Aristotle; the "Unmoved Mover" being an almost literal embodiment

of the dialectical necessity pointed out by Anaximander. The progress is not great; Aristotle's position is far from final; but the point of concern to us is that there has been progress, namely, from an articulate question with an inarticulate answer, to an articulate question with an articulate answer, and that the pivot of this progress is the old thinker's perception what the question about nature and change itself presupposes. He had a glimpse of a necessary element in the structure of the world. He was the prophet of a future understanding. He used for a moment the distinctive metaphysical method.

Certainly metaphysics can be no compendium of science; nor are metaphysical solutions available as prior directives of science, except perhaps in the form of the exclusion of false paths. But, as Professor Otis Lee said in the course of the logical discussion yesterday, we may well be late in discovering as self-evident that which is in its nature self-evident—a point of major importance in the definition of "self-evidence." And the prescience of that which will someday be seen as self-evident may well serve as the unacknowledged guide of the maker of scientific hypotheses, as it certainly does for the common man in his quest for bearings in a growingly difficult universe.

The results of metaphysics are too important to be the privilege alone of the intelligentsia or of the subtle-minded or of the latest comers in the world's history. Its concern is democratic, even while its technical pursuit calls for the full reach of critical power; and its democracy is provided for in this intuition of necessity, which, as a universal human capacity, acts as a pilot also to the technician. The work of the technician is to give clarity and precision to the common sense and also that beautiful parsimony which is the sign of power. The criteria of his success are not alone consistency and coherence, but also that awareness of freedom given by the experience of understanding, which is at the same time an initiation and a partnership with the real; it may be, in fact, that "flight of the alone to the Alone" in which human union finds its firmest bond. The need for metaphysics is thus not remote and eventual but concrete and actual.

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COMMENTS AND CRITICISM

THEORY AND THE INTEGRITY OF EXPERIENCE

As a man of integrity is a whole man, sound, a unified person, so may experience be integral. This is a part of the import of the metaphysical utterance that "reality is one." Some philosophers believe that such integration is in and of the ultimate nature of things, others that it is an achievement in the field of imaginative experience. All of them value it highly, for various reasons, and there is pretty general agreement that theorizing about experience tends toward *dis*integration, in one way or another. Thus the theorist proceeds at his own risk, and, if intelligent, with safeguards.

In this brief comment, I want to suggest an adequate formulation of the above "facts," after examining a well-known current statement that I take to be inadequate. The conception to be criticized stems from Kant, through Hegel. In its Kantian phase, it is the notion that experience, without the ordering differentiations of the categories of scientific understanding, is in a jelly-like state or a state of flux or "fusion." From an esthetic point of view, the formations of thought worked in this medium are all malformations. They are violations of something virginal. Dewey writes: "In life that is truly life, everything overlaps and merges" (*Art as Experience,* p. 18). And Irwin Edman amplifies this picture of fusion in the final chapter of his *Arts and the Man,* as does Stephen C. Pepper throughout his book, *Aesthetic Quality.* Yeats captures the thought nicely in the phrase, "the whole man, blood, intellect and imagination running together."

The fluidity and intermingling need not be initially given, but, as something valuable or "significant," may represent an achievement of synthesis, enlisting the powers even of intellect. Thus, according to Bradley, Dewey, and Edman, the best corrective for the differentiating tendencies of the special disciplines, such as science, philosophy, and art, is to develop each to the limit where, like the convergent series of rationals defining a real number, they are supposed to meet—and "fuse." At the high level of *theoria* or "vision," great science becomes great philosophy, as great philosophy becomes great art. Edman says that "the business of philosophy and that of art in their major conceptions flow into each other" (p. 150). And Dewey: "Reason at its height cannot attain complete grasp and a self-contained assurance. It must fall back upon imagination—upon the embodiment of ideas in emotionally charged sense" (p. 33). Thus does it show its kinship with poetry.

The main point seems to be that, though theory in the large sense necessarily has diverse functions (esthetic, scientific, etc.), yet it can be faithful to the integrity of experience by "fusing" them on a kind of mount of transfiguration, where they, as beauty, goodness, and truth, become the Trinity—the Many-in-One.

It is this formulation of a very important fact that I want to examine, critically and briefly. And I shall do it more by analogy and figure than by the impact of logically explicit statement, which would make matter for another essay.

A commonplace in the philosophy of linguistic behavior is that language, as ordinarily used in what might be called "average" situations, functions in a number of ways *at once*—assertively, and to evoke actions, feelings, imagery, etc. This is the language of "common sense"—and indeed a "fusion" of meanings which, in isolation, become identifiable as "scientific," "esthetic," etc. Expressions meaning in this holistic way I shall call "holophrastic." And it is this holophrastic fusion (a *con*fusion that is the natural mother of all the special linguistic functions, cognitive and non-cognitive) which may be compared to white light. The special functions would then be comparable to the component colors, and would represent the various ways of "taking" the "given."

Now let us construct a diagram which will help to make the above comparison bear all its fruit for the issue under discussion. It is to be a "star of meaning." The body of the star is white, and this shades off into points, each a different color. Thus we have a point that shades from white at its base to, say, red at its tip. Similarly, a blue point, a yellow point, and so on, to represent the various ways in which signs function—esthetic, scientific, practical, etc. (This classification of sign-functions is not as adequate as certain others, but we shall not raise that issue here. My general notion stands independent of particular classifications of these functions or ways of meaning.)

Now, if this diagram represents the meaning situation, it follows that the more "scientific" or "esthetic" a significant formulation of the common matrix (white light) becomes, by techniques that isolate out the component meaning, the sharper will be its distinction from the other components or functions, whether these are left in solution in the holophrastic matrix or themselves developed each into something special. To isolate and purify a function is to make it more *pointed* (points of our star) in a direction that distinguishes it from the others. Fusion or con-fusion is thus what we begin with, not a consummatory end of significant articulation. And it is *not* the aim of, say, the esthetic endeavor *qua esthetic* to immolate itself together with the others, on a mount of Theoretic

Transfiguration. There is a sense, we have seen, in which it is already sacrificed to the fusion to begin with, and from this it must be redeemed by specialization, or by the wise use of special techniques.

Now, in the light of these considerations, we are prepared to understand and do greater justice to, say, the appeal to "great" art. Great art is not pure art. In fact, it is only when the artistic or esthetic treatment of the given is not too "pointed" or specialized, but contains what from the purely esthetic point of view are the impurities of moral impact on action and of cognitive impact on intellect, that it is comprehensive, and in that sense great. Pure art is the lyric of sound or color, the affective metrics of design. In a great work of art, as, for example, the *Divine Comedy,* these patterns of fine art are adulterated (hence impregnated) with the foreign matter of moral and scientific discourse. And it is precisely such adulterations that do greater justice to the integrity of experience. In short, even esthetic formulation tapers off into *abstractions* of a special order, if pressed and purified; just as, say, the scientific does in a different direction of precise mathematical articulation. Shelley recognized this when he spoke of "poetic abstraction."

But someone may object that if a fusion of functions makes discourse "great," then the holophrastic language in the medium (white light) of common speech should be the greatest, since here we have fusion *par excellence.* Yet such significance is neither great nor an achievement at all. We begin with it and must emerge from it by *special* construction of one sort or another. So, the objection runs, we have either the commonplaces of con-fused speech, or the abstractions of specialized utterance, and greatness seems to have no place in the above scheme.

I think the answer is clear. By the skilled use of metaphor, ellipsis, and figure, we get an artistic (esthetic) formulation. But, fortunately, such a construction can be so ordered as to have, *in addition,* a descriptive or designatory function (scientific), and a moral (motivational) one, the whole utterance being called "esthetic" as long as the two latter functions are subordinate to the first. Psychologically, we respond to these various "meanings" indiscriminately, as to a fused whole; but, methodologically speaking, the whole (great) utterance is a coöperative *sum* (I used the above expression "in addition" advisedly) of distinct functions or meanings. There is here no nucleus of holophrastic meaning (white-light fusion), but rather a sort of coördination, i.e., distinct and special functions, meeting at a point, without fusion. Thus, the utterance will be "great" because it functions in a number of

special ways at once. It will have a scientific or arguable component readily isolated by a little analysis and factual statement, a motivational component readily articulated as a moral imperative, all while evoking a mood and a vision of light that never was on sea or land. To say of such an utterance that it is "untranslatable," or that its meaning escapes analysis, is to say that its component meanings taken singly or *seriatim* do not have the same full impact on us as their simultaneous functioning in the "great" utterance. And this is certainly true. But the lesson to be learned from this fact is *not* that the utterance formulates a different and higher kind of "truth," to be known, say, by metaphysical intuition, or to be captured and demonstrated only in the "language of the emotions"—unless this is simply another way of saying what I have just admitted.

I return, finally, to the notion of fusion. What I have said about holophrastic meaning, as a confused amalgam of sign-functions on the pre-analytic, commonplace level of communication, is *not* a description of things or of the "given." I do *not* say of "experience" that it is a raw, unformed material or an undifferentiated fusion until constructed by abstractive techniques. This would make of my view a flux or jelly metaphysics, for which I have never been able to find evidence. It seems pretty obvious that experience or nature or the world even as "given," or prior to any articulate formulation, has differentiating contours of some sort, some of them clear cut. And these, in the last analysis (synthesis?), are the measure of the adequacy of the articulation, in language or symbol.

What I made of holophrastic sign-functioning does, however, have an implication which I consider important. It explains the sense of *something* left unsaid whenever anything gets clearly said —"clear" in a special way. To articulate anything nicely, as scientist or artist, and to press and purify this in the direction of its specialty, is to emerge from the con-fused and congenial medium (white light) of the kind of common discourse that sustains the special kinds (component colors). Thus does a rough matrix of stone sustain the clean-limbed figure issuing from it. It is this loss of holophrastic meaning, and the cure for the hurt, that the mystics celebrate in their metaphysics of inarticulate re-union with the One, and that "great" articulation tries, never quite successfully, to compensate for.

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A QUERY ON CONFIRMATION

Hempel, Carnap, Oppenheim, and Helmer[1] have recently made important contributions towards the precise definition of the concepts of confirmation and degree of confirmation. Yet they seem to me to leave untouched one basic problem that must be solved before we can say that the proposed definitions are intuitively adequate—even in an approximate sense and for very limited languages.

Induction might roughly be described as the projection of characteristics of the past into the future, or more generally of characteristics of one realm of objects into another. But exact expression of this vague principle is exceedingly difficult. Some of the contradictions that result from seemingly straightforward formulations of it were explained and overcome in Hempel's papers. Unfortunately, equally serious difficulties remain.

Suppose we had drawn a marble from a certain bowl on each of the ninety-nine days up to and including VE day, and each marble drawn was red. We would expect that the marble drawn on the following day would also be red. So far all is well. Our evidence may be expressed by the conjunction "$Ra_1 \cdot Ra_2 \cdot \ldots \cdot Ra_{99}$," which well confirms the prediction "Ra_{100}." But increase of credibility, projection, "confirmation" in any intuitive sense, does not occur in the case of every predicate under similar circumstances. Let "S" be the predicate "is drawn by VE day and is red, or is drawn later and is non-red." The evidence of the same drawings above assumed may be expressed by the conjunction "$Sa_1 \cdot Sa_2 \cdot \ldots \cdot Sa_{99}$." By the theories of confirmation in question this well confirms the prediction "Sa_{100}"; but actually we do not expect that the hundredth marble will be non-red. "Sa_{100}" gains no whit of credibility from the evidence offered.

It is clear that "S" and "R" can not both be projected here, for that would mean that we expect that a_{100} will and will not be red. It is equally clear which predicate is actually projected and which is not. But how can the difference between projectible and non-projectible predicates be generally and rigorously defined?

That one predicate used in this example refers explicitly to

[1] In the following papers: C. G. Hempel, "A Purely Syntactical Definition of Confirmation," *Journal of Symbolic Logic*, Vol. 8 (1943), pp. 122–143; "Studies in the Logic of Confirmation," *Mind*, n.s., Vol. 54 (1945), pp. 1–26; Hempel and Paul Oppenheim, "A Definition of 'Degree of Confirmation,'" *Philosophy of Science*, Vol. 12 (1945), pp. 98–115; Oppenheim and Olaf Helmer, "A Syntactical Definition of Probability and of Degree of Confirmation," *Journal of Symbolic Logic*, Vol. 10 (1945), pp. 25–60; Rudolf Carnap, "On Inductive Logic," *Philosophy of Science*, Vol. 12 (1945), pp. 72–97; and "The Two Concepts of Probability," *Philosophy and Phenomenological Research*, Vol. V (1945), pp. 513–532.

temporal order is inessential. The same difficulty can be illustrated without the supposition of any order. Using the same letters as before, we need only suppose that the subscripts are merely for identification, having no ordinal significance, and that "S" means "is red and is not a_{100}, or is not red and is a_{100}."

The theories of confirmation in question require the primitive predicates to be logically independent.[2] This is perhaps a dubious stipulation since it places a logical requirement upon the informal, extrasystematic explanation of the predicates. Such doubts aside, the requirement would make it impossible for the predicates "R" and "S" to belong to the same system. Hence the conflicting confirmations would not occur in any one system. But this is of little help, since the system containing the predicate "S" alone is quite as admissible as the one containing "R" alone; and in the former system, as we have seen, "Sa_{100}" will be formally confirmed by the very evidence which intuitively disconfirms it. Carnap's concept of the "width" of a predicate does not bear on this point, since all atomic predicates are of the same width.[3]

More complex examples illustrating various phases of the same general question can easily be invented. I give only one more, to show how the theory of degree of confirmation is affected.

Suppose [4] that a certain unfamiliar machine tosses up one ball a minute and that every third one and only every third one is red. We observe ninety-six tosses. How much confidence does this lead us to place in the prediction that the next three tosses will produce a non-red ball, another non-red ball, and then a red ball? Plainly a good deal. But what degree of formal confirmation does the prediction derive from the observations according to the theories under consideration? The answer seems to be that this varies widely with the way the given evidence is described.

(i) If we let "a_1," "a_2," and so on represent in temporal order the individual tosses, our evidence may be expressed by

"$-Ra_1 \cdot -Ra_2 \cdot Ra_3 \cdot -Ra_4 \cdot -Ra_5 \cdot Ra_6 \cdot \ldots \cdot -Ra_{94} \cdot -Ra_{95} \cdot Ra_{96}$."

This imparts to the prediction "$-\mathrm{Ra}_{97} \cdot -\mathrm{Ra}_{98} \cdot \mathrm{Ra}_{99}$" the degree [5]

[2] Although this requirement is not explicitly stated in the articles cited, Dr. Hempel tells me that its necessity was recognized by all the authors concerned.

[3] See page 84 of the first article by Carnap listed in footnote 1.

[4] The example in its present form is due to Dr. Hempel. He constructed it as the result of a conversation with Dr. W. V. Quine and the present writer concerning the problems here explained.

[5] The degrees of confirmation given in this paper are computed according to the Hempel-Oppenheim theory. The values under Carnap's theory would differ somewhat, but not in a way that appreciably affects the general question under discussion.

of confirmation $\frac{2}{3} \cdot \frac{2}{3} \cdot \frac{1}{3}$, or $\frac{4}{27}$. This figure seems intuitively much too low.

(ii) If we let "b_1" stand for the discontinuous individual consisting of the first three tosses, "b_2" for the individual consisting of the next three tosses, and so on, and let "S" mean "consists of three temporally separated parts ('tosses') of which the earliest and second are non-red and the latest red," our evidence may be expressed by

$$\text{"}Sb_1 \cdot \ldots \cdot Sb_{32}\text{."}$$

This gives to "Sb_{33}" the degree of confirmation 1. Yet "Sb_{33}" expresses the same thing as "$- Ra_{94} \cdot - Ra_{95} \cdot Ra_{96}$," and we have assumed the same observations. Hence we seem to get different degrees of confirmation for the same prediction on the basis of the same evidence.

Now it may be argued that in (i) we ignored the fact of temporal order in stating our evidence, and that it is thus not surprising that we get a lower degree of confirmation than when we take this fact into account, as in (ii). However, it would be fatal to accept the implied thesis that an intuitively satisfactory degree of confirmation will result only when all the observed facts are expressed as evidence. Suppose the first ninety-six tosses exhibited a wholly irregular distribution of colors; the hypothesis that this distribution would be exactly repeated in the next ninety-six tosses would have the degree of confirmation 1. What is worse, if we are to express *all* the observed data in our statement of evidence, we shall have to include such particularized information—e.g., the unique date of each toss—that repetition in the future will be impossible.

Undoubtedly we do make predictions by projecting the patterns of the past into the future, but in selecting the patterns we project from among all those that the past exhibits, we use practical criteria that so far seem to have escaped discovery and formulation. The problem is not peculiar to the work of the authors I have named; so far as I am aware, no one has as yet offered any satisfactory solution. What we have in the papers cited is an ingenious and valuable logico-mathematical apparatus that we may apply to the sphere of projectible or confirmable predicates whenever we discover what a projectible or confirmable predicate is.

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BOOK NOTES

Physics and Philosophy: A Study of Saint Thomas' Commentary on the Eight Books of Aristotle's Physics. JAMES A. MCWILLIAMS, S. J. (Philosophical Studies of the American Catholic Philosophical Association, Vol. II.) Washington, D. C.: The American Catholic Philosophical Association. 1945. viii + 143 pp. Paper, $2.00; cloth, $2.50.

Were it not for the fact that this book was accepted for publication by the American Catholic Philosophical Association, and endorsed by that organization as a handbook for students of philosophy, it would call for little comment beyond the reflection that this is a free country in which people can write as they please. But when the book is designed for the use of students, especially for students in Catholic institutions whose educational methods are essentially authoritarian, it deserves a more critical scrutiny than it seems to have received from the committee which recommended its publication.

Father McWilliams states in his Foreword that the aim of this work is to "relieve the labor of the student who is bent on a mastery of the significant content of the *Physics*" (p. viii). The method chosen toward this end is that of substituting, in place of Aristotle's *Physics* and of St. Thomas's commentary on it, a summary or topical outline of St. Thomas's commentary. This is supplemented by an English translation of a short selection from Book III of that commentary, and by two introductory chapters discussing the setting of the *Physics* and its meaning. Apparently not content with his first condensation of St. Thomas's commentary, Father McWilliams devotes an appendix to a super-condensation of the eight books of the *Physics,* in which Aristotle's philosophy of nature is telescoped into exactly eight and one-half pages.

Like most short cuts to wisdom, this reduction of the *Physics* to a bare inventory of its contents, stripped of the detailed discussions and arguments which give the original work its intelligibility and philosophic power, defeats its purpose. To make sense of the condensation, a student would need to study the original—but if he does that, he has no need of the condensation. The latter, moreover, takes very noticeable liberties with the text, by its omissions, free paraphrases, and terminology. For example, Aristotle's statement of his so-called "laws of motion" at the end of Book VII is summarily restated as follows: "When a body is moved, its velocity varies in direct proportion to the force applied; or, granted the *same* force, in inverse proportion to the mass of the body; that is,

provided the force, or strain, moves it at all" (p. 106). No warning is given the student that the Newtonian terms used (i.e., mass, force, velocity, strain) are not to be understood by their normal modern definitions.

When we turn to the introductory essay entitled "Laws of Motion," we find the underlying explanation of Father McWilliams' manner of paraphrasing and condensing the original texts. For in this essay it is asserted, as if the matter were beyond reasonable doubt, that the dynamics of Aristotle was fundamentally identical with that of Newton. Again no warning is given the student that this is an unusual thesis, running counter to practically the entire weight of scientific and scholarly authority. What makes the situation worse is the fact that this "guide" to Aristotle's *Physics* effectively prevents the student from testing Father McWilliams' thesis by the authentic texts, through offering him a labor-saving condensation in place of the original.

The collaboration between Father McWilliams' introductory chapters and his condensation of the *Physics* is nicely illustrated in the case of the famous question of projectile motion—a key problem in any discussion of the dynamics of Aristotle in comparison to that of Newton. This problem is discussed in *Physics* VIII, 266a 25 ff., it being definitely stated in Aristotle's text that it is the action of the air which propels the projectile after it has left the hand of the thrower. In his condensation, Father McWilliams omits this whole discussion of projectile motion. But in his introductory essay he mentions the passage in Aristotle, and then goes on to interpret it, if the word "interpret" can be used for such a procedure, so that the reader is left with the impression that Aristotle did not really attribute projectile motion to the action of the air after all, but to the "inertia" of the projectile itself. In the original text, Aristotle rejects the theory of "antiperistasis" as inadequate, and offers an alternative theory according to which the air, in virtue of its compressibility, propels the projectile along successive parts of its trajectory by a kind of wave motion. Father McWilliams, however, mentions Aristotle's rejection of the "antiperistasis" theory as if it were a rejection of the whole notion of propulsion by the air, and gratuitously imputes to Aristotle the notion of "a dynamic factor, which in our terminology is momentum" (p. 12). Having thus indicated that Aristotle meant something other than what he said, Father McWilliams generously concludes his discussion in these words: "Here we have our *whole* doctrine of momentum and inertia" (p. 13—italics mine). I feel sorry for the student who accepts this opinion on the authority of Father McWilliams' short-cut guide to the *Physics,* and who then

has to defend it by producing the Aristotelian texts—namely, *Phys.* VIII, 266a 25, *De caelo* II, 288a 21, and *De caelo* III, 301b 18.

A similar use is made by Father McWilliams of Aristotle's discussion of the void, in *Physics* IV, Chapter 8. He cites Aristotle's statement that *if* motion in a vacuum were possible, all bodies would move at the same velocity (p. 14), and he quotes Aristotle's statement that *if* a vacuum were possible a body set in motion within it would have no reason for coming to a stop *here* rather than *there* (p. 17). Neglecting to draw Aristotle's conclusion—namely, that since these results are *impossible,* the assumption of a vacuum is impossible,—Father McWilliams treats these hypothetical statements of impossible consequents as if they were categorical assertions of these consequents, and he draws the totally unwarranted conclusion that Aristotle *asserted* Newton's first law. Of Newton, Descartes, St. Thomas, and Aristotle, Father McWilliams has this to say: "The doctrine of all these four is *identical*" (p. 17—italics mine).

E. A. M.

Studies in Sri Aurobindo's Philosophy. S. K. MAITRA. Benares: Benares Hindu University. 1945. 160 pp.

This volume contains six essays supplementing the author's excellent *Introduction to the Philosophy of Sri Aurobindo.* The first essay comparing Sri Aurobindo and Bergson yields in seed form the content of the other essays on the religion of the future, the problem of evil, intuition, the superman to come, and the status of man. Sri Aurobindo and Bergson are regarded as the two greatest thinkers of modern times with Sri Aurobindo considerably the greater.

The author points out that Bergson defines intuition "as a kind of intellectual sympathy by which we can enter into the heart of a thing and thereby coincide with what is unique in it and consequently inexpressible." This is only one stage in the cognitive trance and should, according to the author, be superseded by a cosmic consciousness wherein a total consciousness emerges which reveals all objects all at once. Sri Aurobindo achieves this by distinguishing five levels of consciousness above the mental which he names Higher Mind, Illumined Mind, Intuition, Overmind, and Supermind. Mental stuff is supposed to adhere to the first three and even Overmind is said to have certain limitations because it comprehends the universe under only one aspect. The only pure intuitive experience free of reason is that which comes from above when Supermind descends into the mind. This reviewer paused at

that point to wonder whether the levels of consciousness differentiated above the mental were more academic than real. The creation of five name-tags is no evidence that the five levels exist.

The author goes on to state that Bergson views reality as uninterrupted movement of a vital urge which is ever becoming and is always in free movement. Change then is the substance of things and is indivisible. This flow may be retarded or even reversed when matter arises. With the rise of matter man has to depend on other faculties than intuition to understand the universe—for instance, intelligence and instinct. Matter is a difficult point in Bergson's thinking. Sri Aurobindo, however, gets around any difficulties with matter or "being" or "becoming" by ascending to a higher level which he calls Supreme Reality. This is unknowable to mankind but it is self-evident to itself. Then how can we know it? The answer, of course, is: by means of the top level of intuition when Supermind descends into mind. Intuition with any mental stuff adhering to it could never figure that out.

And this leads the author to the theory of evolution and the destiny of man. According to Bergson the ultimate destiny of man is to be one with the life current. Sri Aurobindo was dissatisfied with the lack of teleology in this point of view and felt that there should be development from matter into life, from life into mind, and from mind into spirt. Or, in a word, the goal should be the Spirit's return to itself. This is achieved by the descent of the Supermind. And this brings forward, according to the author, the final evidence of the superiority of Sri Aurobindo's thinking. Where Bergson fails to say that evolution will inevitably produce a higher type of man, Sri Aurobindo believes in the absolute necessity of the emergence of Divine Men—Superman. This is more than a super human; it is a spiritualization of man, a complete transformation of man's nature.

The religion of the future, then, is not the religion of man but of Superman, and it is not individual in realization but cosmic. Evil exists only when evolution is at the vital and mental stages and vanishes with the emergence of the Superman. The author admits that such a religion is cold comfort and the world is not yet ready for it.

These essays are of considerable value in showing the different approaches to and solutions of the same problems by a western and an Indian mind. Both were mystics, both were intuitionists, both had ideas on evolution and the end of man. Neither would be satisfied to accept the solutions of the other. Sri Aurobindo would feel that Bergson had just made a good start. Bergson would feel that Sri Aurobindo had made a bad end to a good beginning. Bergson

remains near the human level while Sri Aurobindo flies off like a comet seeking its original star.

K. P. L.

CURRENT JOURNALS

JOURNAL OF SYMBOLIC LOGIC. Volume 11, Number 1. A functional calculus of first order based on strict implication: *Ruth C. Barcan.*

JOURNAL OF THE HISTORY OF IDEAS. Volume VII, Number 3. Intellectual Interests in 14th- and 15th-Century Libraries: *Pearl Kibre.* The Function of Law and Justice in the Ancient World and the Middle Ages: *Anton-Hermann Chroust.* The Evolutionism and Pragmatism of Peirce: *P. P. Wiener.* Notes and Documents—A Note on Peirce's Evolutionism: *A. O. Lovejoy.* Symposium—Levels of Meaning and the History of Ideas: *Abraham Edel.* Philosophical Significance of the History of Thought: *P. O. Kristeller.* Logical Significance of the History of Thought: *P. P. Wiener.*

TIJDSCHRIFT VOOR PHILOSOPHIE. 8e Jaargang, Nr. 1. De wording van het wijsgeerig spiritualisme: *G. Verbeka.* Wege der Gotteserkenntnis: *Edith Stein.* Prof. E. De Bruyne over kunstwerk en aesthetisch beleven: *A. Janssens.* Over de zeden van onzen tijd: *V. Van Waas.* De eenheid van het menschelijk kennen: *H. Geurtsen.*

We print below a list of selected articles from the following publications:

THE PERSONALIST. Spring, 1946. Social Conditions of Peace: *H. L. Searles.* Homage to Susan Stebbing: *P. Magg.* Right and Wrong in a Democracy: *D. L. Miller.*

THOUGHT. Volume XXI, Number 80. History and Philosophy: *Luigi Sturzo.*

THE KENYON REVIEW. Spring, 1946. The Outlook for Aesthetics (Post-War Stock-Taking No. II): *S. C. Pepper.*

COMMENTARY. Vol. I, No. 5. The Crisis in Human History: *John Dewey.* (No. 6) Religion without Tears: *Irwin Edman.*

HIBBERT JOURNAL. Vol. XLIV, No. 3. The Shape of Modern Culture: *Mary E. Clarke.*

HARVARD THEOLOGICAL REVIEW. Volume XXXIX, Number 1. Theology and Mythology in Aeschylus: *H. J. Rose.*

BRITISH JOURNAL OF PSYCHOLOGY. Vol. XXXVI, Part 2. Personality structure and measurement. I. The operational determination of trait unities: R. B. CATTELL.

UNION SEMINARY QUARTERLY REVIEW. Vol. I, No. 4. The Two Types of Philosophy of Religion: *Paul Tillich.*

LAVAL THÉOLOGIQUE ET PHILOSOPHIQUE. Volume I, Numéro 2. On Cassirer's Conception of Art and History: *F. W. Kearney.* La critique marxiste de la religion: *Henri Legault.* Sciences sociales et sciences morales: *Charles De Koninck.*

GREGORIANUM. Vol. XXVII, 1. L'existentialisme à la manière de Kierkegaard: R. ARNOU.

FILOSOFIA Y LETRAS. Tomo X, Numéro 20. Cinco Anos de Filosofía en México: *José Gaos.* Sobre el concepto formal y objetivo de SER: *J. D. García Bacca.* Fray Tomás Mercado, O.P., Traductor de Aristóteles y Comentador de Pedro Hispano en la Nueva España del siglo XVI: *Oswaldo Robles.*

NOTES AND NEWS

We regret to learn of the death of Ross Earle Hoople, Professor of Philosophy at Syracuse University, on June 17th, 1946, at Syracuse, New York.

The Association for Symbolic Logic has announced the following appointments and elections:

As Editor of the *Journal of Symbolic Logic,* for a term of three years from January 1, 1946, Professor Max Black; as Acting Secretary-Treasurer of the Association, Dean Albert E. Meder, Jr. As permanent Secretary-Treasurer of the Association and as Managing Editor of the Journal, for a term of two years from January 1, 1946, Dr. Isabel Creed Hungerland; as members of the Executive Committee for a term of three years, Professor B. A. Bernstein and Professor Marvin Farber; as member of the Council, Dr. Anders Wedberg of the University of Stockholm.

The British Institute of Philosophy was founded under Lord Balfour twenty-one years ago, to serve as a link between professional philosophers and the interested layman, and to spread such wisdom as the former may possess as widely as possible. It conducts lectures and discussion groups in various British cities; it publishes the quarterly, *Philosophy,* under the editorship of its Director of Studies, Sydney E. Hooper. It has been unusually successful in extending the influence of philosophic thought among leaders in other fields. It regards the task of philosophy as both critical or analytic, and constructive or synoptic, and "hopes to get

a glimpse of the nature of the Universe and a true notion of the part that man plays in the whole scheme of things."

After the difficult war years, the Institute now hopes to extend its membership, especially in this country, and its officers ask all interested in its objectives to join. The annual subscription is one guinea, which includes receipt of the quarterly journal, *Philosophy*. Application for further information and forms of membership should be made to The Director of Studies, The British Institute of Philosophy, University Hall, 14, Gordon Square, London, W.C.1.

The letter appealing for members concludes:

"There must be great numbers of men and women, in all walks of life, who recognize that our age is a time of intellectual and moral confusion, and that this is the root cause of its troubles and disasters. Some may take refuge in a passive and futile pessimism; others may be tempted to plunge into some desperate kind of revolutionary action, more likely to make things still worse. To build up a body of positive, instead of merely critical, thought, as a basis for well-considered constructive action in the spheres of morals, of politics and of economics, is the only right course. In this a leading part should be played by British philosophy, which has won much distinction in the past, and may render still greater service in the future, in formulating thought and linking it with action. But an organization is needed to furnish a platform for discussion and to disseminate ideas. The British Institute of Philosophy is such an organization. What is now necessary is a reinforcement of its numbers as a means to reinvigorating its action.

Yours faithfully,

SAMUEL	(President)
W. D. ROSS	(Chairman)
LINDSAY OF BIRKER	(Deputy Chairman)"